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ABSTRACT

Current definitions and philosophical foundations of qualitative research are presented; and designs, evaluation methods, and issues in application of qualitative research to education are discussed. The effects of positivism and the post-positivist era on qualitative research are outlined, and naturalist and positivist approaches are contrasted. Contributions of anthropology, the social survey movement, sociology, and the social upheavals of the 1960's are noted; and the growth of qualitative research in the field of education during the past 30 years is briefly reviewed. General traits characterizing qualitative research and naturalistic research are discussed. Topics associated with design issues include inquiry focus, the fit of the paradigm, data collection and recording, successive phases of inquiry, instrumentation, data analysis, logistics, and trustworthiness. Case studies and multi-site studies are discussed. In terms of the evaluation of qualitative research, issues covered include truth value, applicability, dependability, and confirmability. It is concluded that educational researchers need to be fluent in both qualitative and quantitative research methods. (TJH)

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A GENERAL SURVEY OF QUALITATIVE RESEARCH METHODOLOGY

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INTRODUCTION

C.P. Snow, in The Two Cultures and the Scientific Revolution (1964), differentiates two domains of knowledge. He termed these the "scientific" world and the "literary" world. Snow argued for equal status and then for rapprochement between the two. Snow's metaphor may be extended to social science in general and to educational research in particular. In the contemporary arena, the two worlds are referred to as qualitative and quantitative research, respectively. Other terms are used as well. Among these are naturalistic, ethnographic, phenomemological, field studies, case studies, hermeneutics, inductive studies, symbolic interaction, and participant observation, (LeCompte, 1987).

Whether the two worlds co-exist in parallel, equally valuable forms in educational research or whether there can or should be a rapprochement is the subject of controversy. Hatch (1985), Lincoln and Guba (1985), Bogdan and Biklen (1982), and Geotz and LeCompte (1984) are among those who argue that qualitative and quantitative research are separate prardigms in the Kuhnian sense, each with its own set of philosophical foundations, assumptions, characteristic methodologies, and goals. Integration of the two is neither desirable nor possible, they assert. Implicitly or explicitly, all agree that forms of qualitative social science research can be of value in increasing human knowledge and understanding to a degree that is comparable to that attainable via quantitative methods. Some go farther, arguing that the qualitative paradigm eclipses the quantitative one.

While these statements have been and will certainly continue to be contested for a considerable time to come, there has been a marked increase in the numbers of qualitative research studies reported. Presumably, one can infer a degree of acceptance in the academic community for qualitative research. One observer of the American Educational Research Association's annual meetings has noted a definite increase in the numbers of juried presentations of qualitative research in the past ten years, (Wisniewski, 1988). As anecdotal as this report is, few observers would take issue. Hard numbers in support of this statement would be interesting and, with some labor, are certainly obtainable. However, such detail is beyond the scope of this paper. Rather, this paper hopes to accomplish the following: to present current definitions of qualitative research, noting alternative and similar terms and establishing contrasts with quantitative research; to explore at least cursorily the history of qualitative research; to delineate the philosophical foundations and assumptions of qualitative research; to describe the characteristics of the various types of qualitative research; to survey various types of designs in qualitative research; to describe methods of evaluating qualitative research; and to explore several issues pertinent to qualitative research in education. Critical comments and responses are offered where appropriate.

Definitions

One writer on the subject of qualitative educational research, Jacob (1987), suggests that attempts to arrive at one general definition of qualitative research which subsumes all of the extant species has resulted in confusion that diminishes its parity with quantitative research traditions. Evidently heeding this caution, Bogdan and Biklen (1982) define qualitative research mostly by listing its parts or sub-fields. They write, "We use qualitative research as an umbrella term to refer to several research strategies that share certain characteristics...The best known representatives of qualitative research and those that embody the most characteristics are participant observation, in-depth interviewing, field research,...naturalistic,...ethnographic,...phenomemological, case study, interpretive, ethnomethodological, ecological and descriptive," (pp. 2-3).

While this approach to definition has some merit and is also taken by authorities such as Lincoln and Guba (1981 and 1985), it repeats the too-often cited but nevertheless instructive problem of the three blind men and the elephant. Each of the specific sub-types or methodologies can be very adequately defined. For example, Goetz and LeCompte (1984) define ethnography as "analytic description or reconstruction of intact scenes and groups," (p. 2). However, it would seem that if we are to accept qualitative research as a newly emerging paradigm on par with quantitative research, we should be able to formulate a succinct general statement that distinguishes it as such.

Perhaps a workable general definition can be formulated by appealing to the nature of the data that the two types of research each treat. Bogdan and Biklen (1982) note that one characteristic of qualitative research is that, "The data collected has (sic) been termed soft," (p. 2). They do not base a definition on this single characteristic, however. It may be said that qualitative research collects, analyzes, and interprets as its primary data non-magnitude categories, properties, or attributes which are descriptive of the subject's own experience and in the subject's terms. Qualitative research deals with data that describes types or kinds of variables, not their magnitudes. Quantitative research, on the other hand, deals exclusively with magnitudes.

Philosophical Foundations

Bogdan and Biklen (1982) note that all qualitative research methodologies share to some degree a phenomenological orientation, (p. 31). By analogy, they suggest that the central feature of phenomenology as it applies to qualitative research in education is that meaning--or knowledge--or truth--is relative and depends on the particular perspective of the individual. Phenomenological researchers do not impose external concepts on subjects nor do they assume that they know what subjects' experiences mean in terms other than the subjects' own. Bogdan and Biklen trace the development of a phenomenologically based social science research to the philosophers Edmund Husserl and Alfred Schutz. The concept verstehen, traceable to the sociological contributions of Weber, is also important. This term refers to the "interpretive understanding of human interaction," according to Bogdan and Biklen, (p. 31). This term will be explored more fully below.

Bogdan and Biklen include in their discussion statements about phenomenological inquiry by several authorities that provide additional understanding. Some of the significant statements are as follows:

> "Phenomenological inquiry begins with silence. This silence is an attempt to grasp what it is that they are studying," (Psathas, 1973).

> "What phenomenologists emphasize, then, is the subjective aspects of people's behavior. They attempt to gain entry into the conceptual world of their subjects," (Geertz, 1973).

"Phenomenologists believe that for human beings multiple ways of interpreting experiences are available to each of us through interacting with others, and that it is the meaning of our experiences that constitutes reality," (Greene, 1978).

"Realtiy is socially constructed," (Berger and Luckman, 1967).

"Objects,people, situations, and events do not posses their own meanings; rather, meaning is conferred on them," (Blumer, 1969).

Patton (1980), discussing the philosophical roots of qualitative research strategies, also underscores the phenomenological underpinnings. He describes verstehen as the fundamental concept which integrates the various types of qualitative research. Patton writes, "The verstehen tradition stresses understanding that focuses on the meaning of human behavior, the context of social interaction, an empathetic understanding based on subjective experience, and the connections between subjective states and behavior." Patton notes the assumption of the verstehen approach that human beings are substantively different from objects in the physical world that are within the realm of study of the natural sciences. The implication, therefore, is that substantively different methods of inquiry are required to fully understand human beings. The various qualitative methodologies offer this. Patton quotes Strike (1972) to support his ideas, "Human beings can be understood in a manner that other objects of study cannot...a human being lives in a world which has 'meaning' to him,

and because his behavior has meaning, human actions are intelligible in ways that the behavior of non-human objects is not," (p. 44).

Ray Rist, a noted qualitative researcher in education, also provides a definition of verstehen which has methodological implications. He writes, "This inner perspective or 'understanding' assumes that a complete and ultimately truthful analysis can only be acheived by actively participating in the life of the observed and gaining insights by means of introspection," (____, p. iv).

Bogdan and Taylor (1975) contrast phenomenology, the foundation of qualitative research, with positivism, an important foundation of quantitative research. Positivism, they write, is traceable to the writings of Auguste Comte and Emile Durkheim. Positivistic inquiry seeks facts and tries to establish causes of social phenomema. Phenomenology, as delineated earlier, is concerned with understanding human behavior from the perspective of the individual. The important reality for the phenomenologist is the reality as it is described by people under study.

Also contrasting the philosophical foundations of qualitative and quantitative research methods, Rist (1976, p. 10) writes, "The epistemological questions raised by qualitative methodology challenge the presuppositions of the natural science approach to scientific investigation. Whereas the former may assume that the study of observable deeds and expressed words is adequate to produce knowledge about man and his world, qualitative methodologies assume there is value to an analysis of both the inner and outer perspective of human behavior."

Rist, Bogdan and Taylor, Patton, and others examined so far take positions which imply that qualitative and quantitative methods of inquiry are competing paradigms which have achieved parity chiefly through new and increasing understandings of qualitative methods and their philosophical foundations. They are, of course, at least tacitly seeking equal status for qualitative research. They are advocates.

Lincoln and Guba (1985), on the other hand, present philosophically sophisticated arguments that positivism-based quantitative methods are in error and are being replaced, in the Kuhnian sense, by the naturalist paradigm, which, as is seen earlier in this paper, includes qualitative methods of inquiry.

Lincoln and Guba posit three paradigm eras in the history of inquiry. These are the pre-positivist, the postivist, and the post-positivist, (1985, pp. 15-39).

The Pre-positivist Era

The pre-positivist era ranges from Aristotle to Hume, who died in 1776. Simply put, Lincoln and Guba characterize this era as the time of the passive scientist. Heavily influenced by Aristotle, pre-positivism features rationalistic, passive observation of natural phenomena rather than active involvement or intervention such as experiemtnation and other empirical methods. Figures such as Newton, Copernicus, Kepler, Galileo, and Descartes were instrumental in the paradigm shift to positivistic re-reseach models.

The Positivst Era

The positivist paradigm is defined as "A family of philosophies characterized by an extremely positive evaluation of science and the scientific method," (Reese, 1980, as quoted in Lincoln and Guba, p. 19). Positivism began in Europe in the nineteenth century and in the early twentieth century, flowering with the Vienna Circle , which included philosophers Rudolf Carnap, Moritz Schlick, and others who are often referred to as logical positivists.

Lincoln and Guba maintain that there is considerable confusion surrounding the task of formulating an adequate definition of and understanding of positivism, (p. 20). They offer six lengthy quotations from various philosophers and historians of science as examples of this confusion. Indeed, The six portray positivism six different ways. Lincoln and Guba point out certain inconsistencies and conclude, "It is very clear from this sample of statments about positivism that there is no clear agreement about what either the philosophy or the method encompasses. Positivism can be re-shaped, apparently to suit the designer's purpose...positivism is passe," (p. 24). It should be noted that it is beyond the scope of this paper to elaborate on the examples that Lincoln and Guba use. It can also be observed that these writings provide a good quick and comprehensive perspective on the philosophical foundations of positivism.

Problems of definition are certainly demonstrable in the case of positivism; however, such problems are ubiquitous in many fields of in-

quiry in the twentieth century. For example, what is Education? Moreover, the same problems have been noted earlier in this paper with attempts to define qualitative research or the naturalist paradigm.

Problems of definition aside, Lincoln and Guba provide a critique of positivism. Their seven points are delineated here mostly in their own words in order to preserve the intricacy and tone of their argument.

1. "Positivism leads to an inadequate conceptualization of what science is...The concept 'science' is only a loose association of family resemblances such as aversion to anthropomorhism, tendencies to secularism, impersonality, abstraction, and quantification," (p. 25). Also, "positivism severly constrains the uses or purposes of science to prediction and control...forcing out of contention other legitimate purposes,as,for example, verstehen or understanding, description, problem responses, etc.," (p. 26).

2. "Positivism is unable to deal adequately with two crucial and interacting aspects of the theory-fact relationship," (p. 26).

    a. The under-determination of theory or the induction problem means that there are many conclusion possible; therefore, there can be no ultimate conclusion or ultimate theory to fit the data.

    b. The theory-ladenness of facts refers to the problem

of the impossibility of having facts to confirm a theory that are not themselves products of theory.

3. "Positivism is overly dependent on operationalism, which has itself been increasingly judged inadequate," (p. 26). They also write that, "operationalism is shallow...resulting in a meaningless splintering of the world," (p. 27).

4. "Positivism has at least two consequences that are both repugnant and unfounded: determinism and reductionism," (p. 26). Determinism refers to the rejection of free will. Reductionism refers to the concept that all phenomena are subject to a single set of laws.

5. "Positivism has produced research with human respondents that ignores their humanness, a fact that has not only ethical but also validity implication," (p. 27). Lincoln and Guba state here that positivists favor researcher-determined inquiry to the exclusion of research methods which convey to subjects some rights or responsibilities for determining or negotiating outcomes. This is weak point in their argument for a number of reasons. While no one would dispute the fact that abuses have occurred, in recent years the use of human subjects in research of any kind has been addressed as a concern. Very stringent procedures have been devised for prior approval and review of research practices. Also in this argument, Lincoln and Guba

are criticizing postivistic research for not having a characteristic of naturalistic research; i.e., involvement of subjects in determining outcomes, etc. To use their own metaphor, this is like criticizing Catholic dogma from a Lutheran perspective, which as they point out violates Godel's theorem. This will be addressed later in this paper.

6. "Positivism falls short of being able to deal with emergent conceptual/empirical formulations from a variety of fields," (p. 27). Examples are Godel's theorem, Heisenburg's Uncertainty Principle, and Bell's theorem.

7. Positivism rest on five assailable assumptions. These are:

    a. That there is an ultimate, tangible reality waiting "out there" to be discovered, studied, and understood by breaking it into parts.

    b. That the knower can be separated from the known.

    c. That there is temporal and contextual continuity applicable to observations.

    d. That linear causality obtains.

    e. That value-free inquiry is possible and desirable.

The Post-positivist Era

These last points of criticism form the basis of Lincoln and Guba's construction of the post-positivist era's naturalist paradigm. In fact, they simply reverse the gears to describe post-positivism: "...the most unexpected aspect of post-positivism is that its basic tenets are virtually the reverse of those that characterized positivism...Post-positivism is as much a reaction to the failings of positivism as it is a proactive set of new formulations," (p. 29).

Lincoln and Guba begin this proactive set with the following distinctions: "Where positivism is concerned with surface events or appearances, the new paradigm takes a deeper look. Where positivism is atomistic, the new paradigm is structural. Where positivism establishes meaning operationally, the new paradigm establishes meaning inferentially. Where positivism sees its central purpose to be prediction, the new paradigm is concerned with understanding. Finally, where positivism is deterministic and bent on certainty, the new paradigm is probabilistic and speculative," (p. 30).

Lincoln and Guba describe Heron's (1981) arguments in favor of the post-positivist paradigm as it applies to the use of human subjects. The six points are:

1. Researchers should apply the same model to their respondents that they assume for themselves; i.e., full disclosure, active participation in the research, etc.

2. Researchers should check with the respondents to determine the correspondence between the respondents' intentions and the researcher's interpretations.

3. Researchers and subjects in cooperative research should agree on the rules of language that they will use to communicate.

4. The research process involves not only propositional knowledge, but also practical knowledge and experiential knowledge. Respondents, therefore, should be fully involved .

5. The truth of a propositions depends on "shared values" between the researcher and a consenting respondent who has been fully informed.

6. Knowledge generated from new paradigm research will avoid exploitation of those from whom it was generated. This rests on the knowledge-is-power equation and the idea that informed and involved subjects cannot be considered accessories to false knowledge claims or misapplication of research results in new paradigm research.

Lincoln and Guba formally detail five axioms upon which they base their conceptualization of the naturalist paradigm. They note that axioms are rather arbitrary assumptions or beliefs that are not self-evidently true, but which are accepted "for the sake of the game," (p. 37). Again, they contrast the new paradigm with the positivist paradigm in the form of a matrix, which is presented overleaf.

Contrasting Positivist and Naturalist Axioms

Axioms About	Positivist Paradigm	Naturalist Paradigm
The nature of reality	Reality is single, tangible, and fragmentable.	Realities are multiple, constructed, and holistic.
The relationship of the knower to the known	Knower and known are independent, a dualism.	Knower and known are interactive, inseparable.
The possibility of generalization	Time-and context-free generalization (nomothetic statements) are possible.	Only time-and context-bound working hypotheses (idiographic statements) are possible.
The possibility of causal linkages	There are real causes, temporally precedent to or simultaneous with their effects.	All entities are in a state of mutual simultaneous shaping, so that it is impossible to distinguish cuases from effects.
The role of values	Inquiry is value-free.	Inquiry is value-bound.

These axioms form the basis for the characteristics of qualitative research that are elaborated below.

A Brief History

Bogdan and Biklen (1982) note that although the increases in numbers of qualitative research projects and their acceptance as part of the mainstream is a relatively recent phenomenon, the methodologies used come from a long and rich tradition in fields such as anthropology and sociology. They also trace the development of qualitative educational research to the emergence of what might be termed "social conscience." They write, "Urbanization and the impact of mass immigration created problems in the cities: problems of sanitation, health, welfare, and education," (p. 4). The responses to the negative effects of the industrial revolution included appeals, often using the then-new technology of photography, to the public and their leaders to implement human social changes. Examples are the work of journalist Lincoln Steffens, and photographers Jacob Riis and Lewis Hine. These exposés or "yellow journalism" efforts were accompanied by the social survey, which was more methodologically rigorous but still not characteristic of pure science.

Bogdan and Biklen note that the social survey movement included "a series of community-wide, coordinated studies of urban problems undertaken near the beginning of the twentieth century. These surveys embodied a particular form because the rise in natural sciences stimulated disciplines like sociology to be perceived as more scientific rather than simply as philosophical," (p. 4). Social surveys in the U.S. were patterned after those carried out in Europe. Examples are Frederick LePlay's studies

studies of working class families in France, Les Ouvriers Europeans (1879), and Henry Mayhew's London Labour and the London Poor, (1851). These two studies used extensive, in-depth interviews and what has now come to be called participant observation, (Bogdan and Biklen, p. 5).

Anthropology's contributions to the emergence of qualitative research in education began with the work of Frans Boas in the late nineteenth century. Bogdan and Biklen (1982) write, "Boas was probably the first anthropologist to write on anthropology and education in an article published in 1898...Boas and his co-researchers were also among the first anthropologists to spend time in the natural setting, although the time spent was brief, and they relied on competent informers who spoke English, (p. 8).

Goetz and LeCompte (1984) point out, however, that these early ethnographic efforts, carried out before the development of codified guidelines for fieldworkers, were not good examples of scholarship, (p. 93).

Boas' main contribution, according to Bogdan and Biklen (1982), is his concept of culture as relative, meaning that each culture had to be studies inductively, (p. 9).

Goetz and LeCompte (1984) mark the beginnings of extensive fieldwork in anthropology as Bronislaw Malinowski's 1922 study of the Trobriand Islanders. They write, "Although personal predilection may have kept some early anthropologists out of the field, with the advent of Malinowski's carefully documented work... and the increasingly large body of work done in

the 1920's and 1930's by students of Boas, it became increasingly difficult to avoid face-to-face contact with particpants. By the 1930's, few researchers could call themselves anthropologists without having first accomplished the rite of passage that initial experience in the field constitutes, (p. 94). One of the primary features of qualitative educational research, the personal involvement of the researcher with the subject is evident in early anthropology. It is interesting to note that Malinowski's contribution may spring more from accident than from virtuos sacrifice. He as stranded in the field during World War I with extremely limited funds, (Bogdan and Biklen, p. 9). However, besides his fieldwork contribution, Malinowski described how he obtained his data and further developed the idea that "a theory of culture had to be grounded in personal experiences based on observations and inductively sought," (Bogdan and Biklen, p. 9).

About the same time as the developments in anthropology, sociology began to use qualitative techniques and to pose the types of questions associated with qualitative research. Goetrz and LeCompte (1984) write, "In the 1920's and 1930's, something very much like ethnography began to emanate from the sociologists at the University of Chicago. Confining their investigations to contemporary North American settings, sociologists such as Robert Park, Everett Highes, and Louis Wirth of the Chicago School used field studies to document life in familiar, most urban communities. They applied sociological rather than anthropological constructs to their

work, but their strategies overlapped the strategies used by cultural anthropologists," (pp. 15-16). Park, as a professor at Chicago, sent his graduate students into the streets to physically enter the society they were to study, (Bogdan and Biklen, p. 10). The characteristic of personal observation or participation by the researcher, then, continued to develop in qualitative research. One important difference between the Chicago School and the earlier social survey movement is that the latter was interested primarily in social reform; whereas, sociology attempted to maintain a scientific objectivity with studies of social problems, etc. (Bogdan and Biklen, p. 11).

The decade of the 1960's saw significant development in qualitative research in education. Bogdan and Biklen (1982) note that educational researchers, not just sociologists and anthropologists, began to take an interest in qualitative methods, especially as federal agencies began to fund research projects employing qualitative techniques, (p. 19). Examples of important studies are Leacock's 1969 study on the effects of teacher expectations of the performance of children and Henry's projects studying racial issues in St Louis elementary schools in 1970 and 1973.

Reasons for this growth include the following: (1) The social upheavals of the times included upheavals in education. People realized they did not know enough about what was going on. Qualitative research provided description. (2) Qualitative research became popular because it recognized the experience of the powerless and socially disenfranchised. It re-created or revealed their viewpoints, (Bogdan and Biklen, p. 20).

In addition to these sociological-political reasons, changes in philosophy, psychology, and other disciplines which influence education also accounted for the emergence of qualitative research in education. In philosophy, a shift from positivism to phenomenology and existential world views has provided impetus for change. These positions are more fully described in the Philosophical Foundations section of this paper.

Ironically, the current status of qualitative research in education is that it has increased in stature to the point of provoking attacks by its critics and calls for methodological accomodation or rapprochement by its adherents. Hatch (1985) has described this debate as a struggle between the "quantoids" and the "smooshes." The major point of his article, and one that finds much agreement among other writers on the subject, is that a revolution is occurring, a paradigm shift as described by Kuhn, (1970), and we therefore have two competing paradigms which are not possible to integrate. This idea is explored further in the Issues section of this paper.

Another sign of growth is that qualitative research, like quantitative research, is beginning to delimit its methodological boundaries; i.e., to specify what constitutes good qualitative resaearch. For example, Rist (1980) in his article entitled "Blitzkrieg Ethnography: On the Transformation of a Method into a Movement," describes misapplications and sloppy research practices in ethnography as "mutations of both its epistemological underpinnings and its methodological applications," (p. 8).

Characteristics of Qualitative Research

As noted in the Definitions section of this paper, qualitative research is diverse and is difficult to define. It is therefore often described in terms of the characteristics of its sub-types, such as case studies, ethnography, open-ended interviewing, etc. Nevertheless, there are a number of general traits which are common to most of its sub-methodologies. This section surveys them and explores some of the more specific characteristics of its major forms.

Bogdan and Biklen (1982, pp. 27-30) offer five general distinguishing characteristics of qualitative inquiry. They note that various forms differ in the degree to which each characteristic applies to it. The characteristics are as follows:

1. Qualitative research has the natural setting as the direct source of data and the researcher as the key instrument. Researchers, being concerned with context, feel that greatest understanding of a phenomenon can be gained by personal, first-hand observation of it in the setting where it occurs and as it occurs naturally. The assumption is that context or setting is an important determinant of the behavior under study.

2. Qualitative research is descriptive. Bogdan and Biklen write, "The data is (sic) collected in the form of words or pictures rather than numbers...In their search for understanding, qualitative researchers do not reduce the pages upon pages of narration and

other data to numerical symbols. They try to analyze it with all its richness as closely as possible to the form in which it was recorded or transcribed," (p. 28).

It can be observed here that it does not seem that the characteristic which they are attempted to elucidate here is best expressed as "descriptive." Numerical data, after all, is descriptive in its way. The term also conveys a certain precise meaning in statistics; i.e., non-inferential methods. Perhaps a better term would be "analogue" or perhaps "iosmorphic." Furthermore, quantitative data can be very rich, especially when multivariate methods are used. Qualitative data, for that matter, is not always rich. It is not difficult to imagine very meager results in some settings which could actually be quite boring and uninterpretable. An observational study of, say, disruptive behavior in study hall by gifted high school students might be an example here.

3. Qualitative researchers are concerned with process rather than simply with outcomes. Bogdan and Biklen cite as an example,research on the effects of teacher expectation on pupil performance by Rosenthal and Jacobson in 1968. They clarify this characteristic with the statements, "Qualitative techniques have been able to show by means of pre- and posttesting that changes occur. Qualitative strategies have suggested just how the expectations are translated into daily activities, procedures, and interactions," (p. 29).

While the concern with process is certainly a characteristic of qualitative research, it is not peculiar to it. There are a number of quantitative methods for studying processes or sequences of events over time. Bogdan and Biklen seem to imply here that concern with process is exclusive to qualitative research. This simply is not the case.

4. Qualitative researhers tend to analyze their data inductively. They do not proceed with a priori questions or hypotheses to be tested. Rather, the research question(s) are usually formulated as the data is gathered and are revealed or emerge from it. They note the term "grounded theory" (Glaser and Strauss, 1967) and liken it to a "bottom up" process.

   This characteristic is indisputably the exclusive property ofd qualitative research, in direct contrast to quantitative methods.

5. Meaning is of essential concern to the qualitative approach. Qualitative researchers here are interested in the subject's own perspectrives, thoughts, assumptions, world views, etc., in their own words and in their own minds. Bogdan and Biklen term this a concern with "participant perspectives," (p. 29).

Lincoln and Guba (1981) also offer a general, but very concise characterization of qualitative research that contrasts it on a number of indices with quantitative research. Their presentation is as follows:

Derivative Postures of the Scientific and Naturalistic Paradigms

	Paradigm	
Postures About	Scientific	Naturalistic
General Characteristics		
Preferred techniques	Quantitative	Qualitative
Quality criterion	Rigor	Relevance
Source of theory	A priori	Grounded
Questions of causality	Can x cause y?	Does x cause y in a natural setting?
Knowledge types used	Propositional	Propositional and tacit
Stance	Reductionist	Expansionist
Purpose	Verification	Discovery
Methodological Characteristics		
Instrument	Paper and pencil or physical device	Inquirer (often)
Timing of the specification of data collection and anaysis rules	Before inquiry	During and after inquiry
Design	Preordinate	Emergent
Style	Intervention	Selection
Setting	Laboratory	Nature
Treatment	Stable	Variable
Analytic units	Variables	Patterns
Contextual elements	Control	Invited interference

This concise presentation, however, requires some elaboration. The most obvious issue in Lincoln and Guba's matrix is the conceptualization of the general catefgories "scientific" paradigm and "naturalistic" paradigm. The exclusion of naturalistic methods, assumptions, and purposes from approaches to research termed "scientific" is likely to be anathema to many researchers. Indeed, the question of whether certain practices constitute science or art or something else altogether can be interesting and can, unfortunately, cover a lot of territory. For the matter at hand, however, the point is that qualitative techniques are the preferred ones within the naturalistic paradigm, although they are sometimes employed within the scientific paradigm. Likewise, quantitative techniques are certainly used in naturalistic research, but are more strongly associated with the scientific paradigm. Lincoln and Guba, then, have conceived of the relationship between quantitative and qualitative research as not mutually exclusive. The umbrella terms which distinguish research in their framework are"scientific"and"naturalistic."

The second revealing characteristic, or posture is the quality criterion used by each paradigm. The authors note that like the relationship between preferred techniques, rigor is not the exclusive property of scientific research, nor is relevance the sole property of naturalistic inquiry. Science seeks relevance and naturalistic research seeks rigor although each in its own ways and each to a different degree on a continuum. Rigor, as Lincoln and Guba use the term, refers to validity, relaibility, and objectivity.

Source of theory is the next distinguishing feature. Naturalistic inquiry is characterized by grounded theory, in which theory for testing or other exploration is generated inductively from experiences of the researchers or what Glaser and Strauss (1967) call "real world data." Scientific inquiry using typical quantitative methods and designs instead generates for testing deductively or logically from a priori assumptions or propositions.

Positions on causality also distinguish the naturalistic from the scientific paradigm. According to Lincoln and Guba, setting is also important. Naturalistic inquiry conerns itself with the question, "Does x cause y in the natural setting?" Scientific inquiry, on the other hand, asks, "Can x cause y in the contrived setting of the laboratory?" Lincoln and Guba are careful here to point out that one paradigm is not to be valued higher than the other in the absolute sense based simply on one of these characteristics. They write,"Even (contrived) events can have enormous significance for the development of theory--to know what is possible is sometimes just as important to know what is likely or normal," (p. 70).

The two paradigms also differ as to knowledge types used. Using Polanyi's (1966) distinction between propositional knowledge and tacit knowledge, Lincoln and Guba note that scientific research uses propositional knowledge exclusively, while naturalistic inquiry permits both forms. Their analogy of denotative and connotative definitions of words explicates Polany's two concepts.

The authors' concept of stance refers to a reductionism-expansionism

continuum. The scientific researcher focuses only on pre-formulated questions and their answers. Expansionistic researchers seek to understand a phenomenon of interest as a whole, openly.

With the purpose category, a more concise description is offered that seems to need no further elaboration: scientific inquiry seeks to verify its hypotheses;whereas, naturalistic inquiry seeks discovery.

The naturalistic and paradigms are also distinguished in terms of their general methodological characteristics. The first of these is the type of instrument preferred by each. Naturalistic inquiry, not having a priori propositions to test must rely on the researcher to develop the themes, questions, etc., and their answers as the inquiry progresses. also, the researcher is often personally involved. For these reasons, the researcher is the instrument. Scientific inquiry, on the other hand, is characterized by methods typified by paper and pencil tests or physical devices such as polygraph machines. The assumption is that a detached researcher using the instruments will be more objective.

As to the timing of data collection and analysis, Lincoln and Guba seem to be reiterating the a priori versus a posteriori (or actually in medias res) distinction between the two paradigms. This same redundancy appears in their discussion of design charactersitics. Scientific paradigm designs are preordinate and fixed; whereas, emergent, variable designs are typical of naturalistic studies.

Lincoln and Guba distinguish between the styles of the two paradigms, referring to the styles of testing hypotheses. The naturalistic style is

is described as selection. Researchers sift through naturally occurring phenomena "until they find those in which nature has arranged an experiment without benefit of man's intervention," (p. 74) The scientific paradigm's style is best described as interventionist; i.e., "the independent and dependent variables are isolated and the context arranged so that these variables and only these varibles can account for whatever findings emerge," (p. 74).

The descriptor, setting, is quite simple. The laboratory is associated with the scientific paradigm; whereas, naturalistic inquiry prefers to conduct inquiry into phenomena in the settings in which they naturally occur. Lincoln and Guba seem to be ignoring quasi-experimentation here.

Lincoln and Guba explain treatment as follows, "the treatment in any experiment must be stable and invariant; otherwise, it is impossible to determine the effect associated with a given cause," (p. 75). The concept of treatment is not, however, characteristic of the naturalist paradigm. If naturalistic researchers find a causal relationship, they do not assume it to be a stable part of the phenomenon. Rather, naturalistic researchers assume that change is a natural part of the phenomenon under study.

Analytic units for the naturalistic paradigm are the complex interrelationships operating in nature. The authors liken these to a spider web in that a change in one part, say a fly caught out near the edge, is accompanied by changes throughout the entire framework.

Lincoln and Guba's discussion of contextual elements that characterize each paradigm focuses on control versus invited interference. Scientific researchers attempt to control all extraneous elements to the item under study.

Naturalists, however, see control as overdone and unrealistic. The authors explain, "Opening inquiry to the influence of unanticipated factors is probably useful as a way of stretching the mind and requiring expansions and refinements in existing theory," (p. 76).

Lincoln and Guba, in their book Naturalistic Inquiry (1985), present a list of interrelated characteristics of naturalistic research. Since there is some repetition of characteristics from their earlier scheme just described above, it will be appropriate to simply list these new characteristics and elaborate only on those which do not appear in their earlier framework. The characteristics are:

1. Natural setting or context
2. Human instrument for data gathering
3. Utilization of tacit knowledge
4. Qualitative methods, although not exclusively
5. Purposive sampling
6. Inductive data analysis
7. Grounded theory
8. Emergent design
9. Negotiated outcomes
10. Case study reporting mode
11. Idiographic interpretation
12. Tentative application
13. Focus-determined boundaries
14. Special criteria for trustworthiness

Purposive sampling, characteristic of naturalistic inquiry, is used for three reasons, according to Lincoln and Guba. These are (1) "To increase the scope or range of data," (2) "To increase the likelihood that a full array of multiple realities will be uncovered," and (3) "To maximize the investigator's ability to devise grounded theory," (p. 40). The authors are not explicit at this point as to exactly what purposive sampling is. This will be addressed later in this paper.

Negotiated outcomes of naturalistic inquiry refers to the active role played by the subjects. The researcher negotiates meanings and interpretations with human data sources "because it is their constructions of reality that the inquirer seeks to reconstruct," (p. 41). Also, the researcher seeks to verify working hypotheses about a given setting or context with the people who inhabit that setting or context.

Idiographic interpretation refers to the characteristic tendency of naturalistic researchers to interpret data in terms of the particulars of the case rather than nomothetically; i.e., as generalization which apply across broad segments. Belief in the existence of multiple realities in different contexts supports this practice. Lincoln and Guba point out that to a great extent, the findings are dependent on the particular interaction between the researcher and the subjects. Characteristic 12, tentative application, is primarily a reiteration of this point with the addendum that researchers using the naturalistic paradigm are reluctant to generalize or to infer to populations.

The setting of focus-determined boundaries to the inquiry by the re-

searcher is also characteristic of naturalistic research. Boundaries, scope, limitations, etc., are established as the focus emerges during the inquiry's progress. The researcher does not establish them without developing firsthand knowledge of the situation.

Finally, special criteria for trustworthiness characterize naturalistic research. The emergent nature of the design precludes the standard criteria associated with scientific research such as internal and external validity, reliability, and objectivity. Lincoln and Guba devote an entire chapter to this topic, introducing concepts such as credibility, transferability, dependability, and confirmability as criteria for naturalistic approaches. These will be surveyed below in the section entitled, "Evaluation of Qualitative Research."

Like Lincoln and Guba, Goetz and LeCompte (1984) reject simplistic, dichotomous conceptualization of qualitative versus quantitative research. Instead, they provide a description based on "assumptive modes," each of which is a continuum along which a particular study may be located. A given study may be located at varying points along the four continua. The assumptivemodes are (1) inductive-deductive, (2) subjective-objective, (3) generative-verificative, and (4) constructive-enumerative. Qualitative research is typically located closer to the inductive, subjective, generative, and constructive poles. Quantitative research tends toward the deductive, objective,verificative, and enumerative ends.

Goetz and LeCompte clearly define and provide examples of studies which occupy the qualitative end of each continuum. They describe the deductive mode as beginning with a theory, operationalizing it and at-

tempting to match it empirically to data. Inductive research begins with data collection and proceeds toestablish theoretical categories or relationships among the data. They rightly note that inductive methods involve empirical observations. Some people erroneously equate the term "empirical" with only scientific or quantitative methods. Goetz and LeCompte create a memorable phrase to capture the inductive-deductive relationship: "...deductive researchers hope to find data to match a theory; inductive researchers hope to find a theory that explains their data," (p. 4). They cite as an example of inductive research Smith's analysis of an inner-city school classroom in which the researcher isolated the teacher's student management strategies, developed concepts describing those processes in the classroom, and formulated a theory of instructional organization from them.

Generative research attempts to discover constructs and propositions from data. It is frequently inductive and may be initiated from no particular theory. Verificative research, on the other hand, attempts to test propositions, to develop evidence that a hypothesis fits certain data, and to generalize beyong the study at hand. Goetz and LeCompte exemplify this dimension by returning to the Smith study in which the data were the observer's notes and the teachers records and reconstructions. From these sources, constructs and categories were formed to build a theory.

The constructive-enumerative dimension refers to the methods of formulating a study's units of analysis. Constructive strategies discover

or abstract constructs or categories from phenomena during the course of observation. Enumeration strategies subject pre-defined units of analysis to systematic counting.

Goetz and LeCompte note that qualitative designs may employ enumerative strategies, but usually not as a major study feature. Also, enumerative studies may use the results of constructive studies.

Finally, the subjective-objective dimension refers to the goal or product of the study. Studies tending toward the objective pole try to describe the categories or constructs that subjects use to describe their own experiences. The objective approach applies concepts for data analysis that are external to the subject's experiences.

The Design of Qualitative Research

Lincoln and Guba (1985. p. 224) point out the seeming paradox inherent in the task of planning or disigning a naturalistic inquiry, which by its nature is emergent,open-ended, and subject to change. Neverthless, as they note, because all of the features of the design cannot be specified a priori, it does not necessarily follow that none of them can be planned or anticipated. They list ten elements of a naturalistic inquiry that should be addressed in planning (pp. 226-249). These are:

1. Determining a focus for the inquiry.

   The authors differentiate three types of foci which depend on the purpose of the inquiry. Inquiry for research purposes should focus on problems. Inquiry for evaluation should focus on "evaluands;" i.e., programs, etc., to be evaluated. Inquiry for policy analysis should focus on policy options. Determining the focus of an inquiry establishes the boundaries of a study and provides inclusion-exclusion criteria for new information. Finally, the authors underscore the need to expect changes in focus.

2. Determining the fit of the paradigm.

   The answer to this question is ultimately subjective. However, there are several questions researchers should ask themselves in determining fit. These are (a) Is the phenomenon under study conceptualized such that it can be re-

presented by multiple variables? (b) To what degree is the presence of the researcher likely to influence the phenomenon under study? (c) To what degree are results likely to be context-dependent; i.e., idiosyncratic events that cannot be generalized beyond the place and time of their occurence? (d) To what degree are values involved in the outcome?

(pp. 229-231).

3. Determining the fit of the inquiry paradigm to the substantive theory selected to guide the inquiry.

The essence of this question appears to involve the idea that some questions can be addressed only the the positivist paradigm and some only through the naturalistic paradigm. In other words, certain questions hold implications for the method(s) of finding their answers.

4. Determining where and from whom data will be collected.

This is essentially a sampling problem. Lincoln and Guba note Patton's (1980) concept of purposive sampling; i.e., identifying extreme or deviant cases, typical cases, maximum variation cases, critical cases, politically important cases, and convenient cases. In short, maximum variation is desirable for naturalistic research. Also, they note that sampling continues until researchers begin to observe redundant information.

5. Determining successive phases of the inquiry.

Phase one is called "orientation and overview," in which the research approaches respondents open-endedly to get a general idea of what is salient. Spadley (1979) terms this phase the "grand tour." Phase two is called "focused exploration" by Lincoln and Guba. It includes more detailed and more structured data collection concerning the phenomena or themes identified as salient in phase one. Phase three is called the "member check." The purpose is to establish trustworthiness and credibility. Here researchers return to respondents to negotiate meanings, check accuracy, etc. The authors also stipulate that researchers should plan for time at the end of each phase for data analysis.

6. Determining instrumentation.

Lincoln and Guba note that the primary instrument in a naturalistic inquiry is the human being. Other types of instruments may be used,but in subsidiary roles. They advise that the "human instrumentation be organized into teams in order to capitalize on multiple areas of expertise, diverse perspectives, mutual support, and to facilitate reliability checks. Since the design is emergent, the researcher needs to arrange for frequent communication between members for conflict resolution, design decisions, further training, etc., as the inquiry proceeds.

7. PLanning data collection and recording modes.

Lincoln and Guba again underscore the difficulties in specifying plans when it is not known what is not known. It is likely, therefore, that the researcher should be prepared to use multiple data collection techniques such as interviews, observation, unobtrusive measures, document and record analysis, etc. These different techniques may be used at different stages of the inquiry. For example, initially, when not much is known, the interview may be used heavily.

One issue in data collection is fidelity, referring to the ability of the data to reproduce exactly what the researcher observed. Although audio and video recording offer the highest fidelity, they have a number of disadvantages that prompt Lincoln and Guba to recommend the use of field notes in the absence of some overriding reason. Basically, field notes are more reliable and readily utilized. The process of note taking also keeps the researcher more alert and involved. Finally, they are not as threatening to the subjects.

8. Planning data analysis procedures.

Again, the emergent nature of naturalistic designs precludes extensive a priori specification. The authors note that the researcher should plan for "convolution of data collection and data analysis throughout all phases," (p. 242). It certainly cannot be batch-processed at one time.

9. Planning the logistics.

The authors establish five categories of logistics for researchers to consider. Accompanied by brief explanations, these are:

(a) Logistical considerations for the project as a whole. An initial design statement should include considerations of the following factors: specification of the agents who will be carrying outthe research, the schedule,the budget the establishment of an advisory or policy board, arrangement for peer debriefing or presentation of findings for critical review, and an external audit.

(b) The logistics of going into the field.

Initially only estimates are possible. Final plans, however, should include the following: selection and assignment of agents to each site; designation of a team leader for each site; arrangement for travel, housing, food, etc.; selection of a local liason for each site; preparation of a field kit for each agent which would include such things as pencils, paper, maps, etc.

(c) The logistics of field excursions while in the field.

These are the responsibility primarily of the team leader. They include: providing for team interaction frequently and regularly so that design and data collection emerge, monitoring or stimulating adaption to the unexpected,

conducting and sharing preliminary data analysis, and assembling materials for delivery to the home base.

(d) The logistics of activities following field activities.

Team members unitize and categorize their data; determine and if need be, plan for additional data collection; engage in peer debriefing; help draft a preliminary report for member checking; and provide support for the individual who will write the final report.

(e) The logistics of closure and termination.

These activities include submitting a draft to a review committee during the member checking phase. The team leader usually returns to the cite to convene such a committee and receive their reactions. A second draft or addendum may have to be written depending on these reactions. Also, a system for handling dissenting opinions will have to be implemented. The auditing process will take place. Finally, production, distribution, or publication of the final report should occur.

Lincoln and Guba conclude their discussion of logistics with the following: "A multitude of logistical considerations must be taken into account...and only a few of them can be completely specified in the original design statement. But it is essential that such a statement be least display familiarity with the problems that can arise....Whatever else the design

statement may say, it must make allowances for the time that will be required to handle the various logistical problems; a safe formula is to estimate the time and then triple it," (p. 247).

10. Planning for trustworthiness.

Lincoln and Guba propose the following as indices of trustworthiness: credibility, transferability, dependability, and confirmability. These must be addressed in the initial design statement. The authors devote an entire chapter to this topic. Also, evaluation of qualitative research is addressed in section of this paper.

Bogdan and Biklen (1982) provide an alternative conceptualization of comprehensive qualitative design. Their general discussion echos many of concerns and concepts cited by Lincoln and Guba and other writers. These points will not be examined here. However, Bogdan and Biklen provide a "mini-taxonomy" of qualitative designs that is worth mention. They differentiate two main categories of qualitative studies, case studies and multiple data source studies, (1982, p.56). The following discussion surveys the characteristics of these two categories.

Case Studies

A case study is defined by Bogdan and Biklen as "a detailed examinationof one setting, or one single subject, or one single depository of documents, or one particular event," (p. 58). The authors note that case studies vary in complexity.

One type of case study is the historical organizational study in which

the researcher examines an organization, presumably such as a school, as it develops or operates over a period of time. This design potentially involves the diverse types of data collection techniques noted above. The major design question here is to establish early on whether or not there are sufficient data sources to complete a meaningful study.

A second type is the observational case study. As the name implies, the major data collection method is participant observation. The focus of this design is on an organization or part of an organization such as a group of people, an activity, a place within it, or individuals within in that share some trait but who are otherwise not a group.

Life history is the third type of case study. Bogdan and Biklen note that the feasibility and the design of the case study are determined by the natrue of the subject and by the first several interviews. Considerations include the subject's memory, degree of articulation ability, willingness to devote the time to participate fully, etc.

Another type of case study is the community study. Essentially, this is a form of the organizational study focusing on a neighborhood or community group.

Situational analysis is a type of case study which focuses on an event with the goal of reconstructing it from the perspectives of significant people involved in it.

Microethnography is another type of case study. It focuses on a very specific aspect or a very small unit of an organization. The authors note that this term is used in several ways by various researchers.

Bogdan and Biklen briefly describe multi-case studies and comparative

case studies. These two types involve generalizability and demonstration of diversity, respectively. These issues are discussed below.

The authors survey several general issues relating to the design of case studies. Most salient of these is the generalizability issue. An early decision for the researcher is whether to select typical cases or unusual cases for study. Typical case selection implies interest in traditional generalizability from the case to a larger population. Selection of atypical cases implies interest in the question, "Where does this setting fit in the spectrum of human events?" (p. 63). This type does not seek traditional generalizability.

Multi-site Studies

Multi-site studies are obviously more complicated than case studies logistically and in other ways. For example, multi-site studies are usually oriented toward developing theory. Bogdan and Biklen delineate two types: modified analytic induction and the constant comparative methods.

Modified analytic induction is a controversial method of collecting data, analyzing it, developing theory, and testing this theory in a looping or iterative fashion. The design can be used with open-ended interviewing, participant observation, or document analysis. It is appropriate with a specific problem, issue, or concept. The researcher begins with an in-depth, open-ended interview of a respondent considered to be a good or typical example of the focus of the inquiry. A general theory is then proposed. A second respondent is then interviewed and subsequently asked to recommend other respondents. This method is known as "snowball sampling."

As the interviews (or observations) continue, the theory is modified accordingly. As this procedure progresses, the researcher interviews negative cases, or respondents expected not to fit into the theory. The theory is then tested and modified accordingly again. This process continues until there are no more cases encountered that do not fit the theory. The research question,like the theory, can be changed during this process.

The constant comparative method is also a looping process or "doubling back" between theory and data. Bogdan and Biklen trace the description of the process to Glaser (1978). The theory fromulation-data collection proceeds in similiar fashion to modified analytic induction except that it is carried out over many more sites, perhaps as many as forty according to the authors. This type also continues to the point of theory saturation or redundancy.

Evaluating Qualitative Research

Lincoln and Guba note the skepticism often directed at qualitative research findings: "The naturalistic inquirer soon becomes accustomed to hearing charges that naturalistic studies are undisciplined....Rigor, it is asserted, is not the hallmark of naturalism," (p. 289). They respond with typical thoroughness to the task of providing a comprehensive evaluative system for demonstrating trustworthiness in qualitative research, (1985, pp 290-331).

The authors formulate an intricate and plausible argument for the proposition that evaluative criteria for positivistic research are inappropriate for the evaluation of naturalistic studies. Criteria for all types of inquiry seem to fall into four categories: questions of (1) truth value, (2) applicability, (3) consistency, and (4) neutrality. Lincoln and Guba relate Campbell and Stanley's (1963) familiar delineation of threats to internal and external validity to these four types of questions. The purpose of various quantitative designs is to control these threats. Evaluation is carried out by determining how well the design functioned in this regard. Reliability is another criterion for positivist research. It is demonstrated by various repetition methods. The point of Lincoln and Guba's argument here is that these criteria and associated methods to test them issue from the axioms or assumptions of the positivistic paradigm itself. These criteria which "belong" to the poistivist paradigm, therefore, are inappropriate as criteria for judging naturalistic research, which has its own axioms and consequent evaluative criteria. The framework of their

argument is from G. Morgan (1983) who in turn used Gödel's theorem which demonstrates that "the propositions of a (mathematical) system cannot be proved, disproved, or evaluated on the basis of axioms within that system," (p. 294). In Lincoln and Guba's words, "the process (each research paradigm) is self-justifying...these criteria inevitably favor research strategies consistent with the assumptions that generate such criteria as...guidelines for research," (p. 294).

Lincoln and Guba proceed to offer criteria that are appropriate for naturalistic research. These criteria fall into four categories noted above. An explanation of each follows.

1. Truth value.

Since the naturalistic researcher assumes that truth is composed of multiple, constructed realities, the way to demonstrate that an inquiry has captured truth is to demonstrate the degree to which it reconstructs these multiple constructions from the respondents. One test of this is whether or not the study's reconstructions are credible to the respondents who produced the data to begin with. Techniques for this testing are (1) activities in the field such as prolonged engagement, persistent observation, and triangulation that increase the probability of high credibility; (2) peer debriefing; (3) negative case analysis; (4) referential adequacy (a strange term that is used to signify simply the use of audio and video recorders to double check the accuracy of data analysis) and (5) member checks, which are defined as inviting subjects to evaluate data and analysis.

2. Applicability.

In conventional positivistic research, applicability is operationally defined as external validity which is domonstrated chiefly by the degree of representativeness between the sample and the population from which it was chosen. Lincoln and Guba underscore the trade-off nature of the external-internal validity issue: " The very controls instituted to ensure internal validity militate against clean generalizations...results that are acquired in that epitome of the controlled situation--the laboratory--are duscovered to be applicable only to other laboratories," (p. 297).

At this point, it should be observed that Lincoln and Guba are portraying the quantitative research tradition as more rigidly precise that it is or claims to be. In Campbell and Cook's Quasi-experimentation ( ) the idea of unilateral causality is critiqued, multivariate modes of analysis are advocated, and support is generated for less-than-perfect quasi-experiemtnation in the social sciences. Quasi-experimentation is then supportable if the various threats to internal and external validity and reliability are known and are dealt with directly by the researcher. This is similair to what Lincoln and Guba are advocating, which seems agreeable enough. However, their argument is slightly hedged in this way.

Naturalistic research, on the other hand, conceives of applicability as transferability. Naturalistic research assumes that the end products of its inquiry will be only working hypotheses for other researchers at other times and in other contexts. No guarantees or even probabilistic statements are offered. Caveat emptor. The

question of transferability is a matter of ascertaining the degree of similiarity between the origninal context and the context targeted for possible application of the results. This then, is an empirical matter.

The technique available to the researcher to maximize potential transferability is referred to as "thick description." Lincoln and Guba note, however, "The question of what constitutes 'proper thick description' is, at this stage of development of naturalist theory, still not completely resolved,' (p. 316). Thick description of course entails great detail in data collection. It also entails purposive sampling described elsewhere in this paper. A third characteristic is that it requires maximum range (variation) of information.

3. Dependability.

The positivistic version of dependability is reliability, indicated essentially by consistency over repetitive trials. Split-half, test-retest, parallel forms, and certain statistical methods for determining internal consistency are specific methods to test for reliability in quantitative research.

The qualitative counterpart of dependability is referred to by Lincoln and Guba as simply, "dependability," (p. 318). They propose as the best means to indicate this the inquiry audit. This is analogous to the fiscal audit. The inquiry audit has two function: to examine the process of the inquiry to ascertain its accpetability and to examine the product of the inquiry, the report, data, etc, as to accuracy and internal coherence. This last function test the con-

firmability of theinquiry, which is the fourth major criterion by which to evaluate research.

4. Confirmability.

The inquiry audit, proposed by Guba and operationalized by Halpern (1983), is a highly specified, detailed process which it is beyond the scope of this paper todescribe. A detailed description of it is presented in Lincoln and Guba (1985). It can be observed that the audit amounts only to the determination of face validity by experts used in the quantitative research tradition. However, it is a very structured and intricate process, almost as much so as the reseqarch process itself.

Lincoln and Guba make a number of general observations and recommendations concerning the establishment of trustworthiness that should be mentioned. One is that the researcher should keep a reflexive journal, the subjects of which are observations pertinent to the study's concern, to self, and to methods. A second observation is that naturalistic criteria are open-ended; i.e., nothing is ever byond the shadow of a doubt. The consumer of the research must decide if he or she is persuaded of the trustworthiness of the inquiry. Finally, the authors point out that criteria proposed should not be reified or established as a neo-orthdoxy. Also, techniques for measuring an inquiry against them are not fully developed.

Goetz and LeCompte (1984) present a framework for assessing the report of an ethnographic study, which can apply to other forms of qualitative research. The report should consist of eight sections: (1) the goals and questions addressed, (2) the conceptual and theoretical framework that informed the research, (3) the overall design, (4) the group that provided the data, (5) experiences and roles of the investigator(s), (6) data collection methods used, (7) analysis strategies developed, and (8) conclusions, interpretations, and applications.

Each section can be evaluated on five indices, each of which can be scaled, according to Goetz and Lecompte, as a continuum. They are:

1. Appropriate---------Inappropriate
2. Clear----------Opaque
3. Comprehensive----------Narrow
4. Credible----------Incredible
5. Significant----------Trivial

(pp. 232-233).

In conclusion, it is observed that trustworthiness is an important and troublesome matter for both paradigms. Conclusions about trustworthiness in both types of research are, in the final analysis, subject to judgment by the consumer. For example, in quantitative research using inferential statistics to test hypotheses, choice of alpha levels is more or less an individual judgment call for the reseacher. The consumer, then,

must judge that judgment.

Also, it seems that some of the most trustworthy research is that about which there has been much controversy and critical debate. Evidently, this critical process shapes either the research or our perception of it.

Issues in Qualitative Research

One important issue is the question of whether nor not qualitative research can be regarded as a paradigm, and if so, whether or not it is legitimate. Patton (1978, p. 203) provides the following definition of the concept of paradigm:

> "A paradigm is a world view, a general perspective, a way of breaking down the complexity of the real world. As such, paradigms are deeply embedded in the socialization of adherents and practitioneers; paradigms tell them what is important, legitimate and reasonable. Paradigms are normative, telling the practitioneer what to do without the necessity of long existential or epistemological consideration. But it is this aspect of paradigms that consititues both their strengths and their weaknesses—their strength in that it makes action possible, their weakness in that the very reason for action is hidden in the unquestioned assumptions of the paradigm."

Thomas Kuhn (1970, pp. 10-11) writes "...some accepted examples of actual scientific practice--examples which include law, theory, application, and instrumentation together--provide models from which spring particular coherent traditions of scientific research....The study of paradigms...is what mainly prepares the student for membership in the in the particular scientific community with which he will later practice. Because he there joins (people) who learned the bases of their field from the same concrete models, his subsequent practice will seldom evoke overt disagreement over

fundamentals."

Without recapitulating all the assumptions and characteristics of naturalistic research or qualitative research as presented by the various authorities surveyed in this paper, it is apparent that the presence of those features which comprise the quantitative paradigm are present in more or less parallel form in the qualitative paradigm. Certainly a paradigm exists according to the difinition offered by Bogdan and Biklen; (1982. p. 30): "A paradigm is a loose collection of logically held together assumptions, concepts, or propositions that orient thinking and research."

The question remains of whether or not the naturalistic paradigm is legitimate. Is it on par with the quantitative paradigm? Is it as valuable? Lincoln and Guba argue for legitimacy. One part of their case presents the interesting change by D.T. Campbell, known of course as a strong advocate of the quantitative approach. They quote the Campbell and Stanley position of 1963 position on the case study: "It seems well-nigh unethical at present to allow...case studies of this nature, (p. 177). By 1979, Campbell and Cook had accepted the legitmacy of the case study: "Our predecessors have probably been mistaken...single-setting, one-time-period case studies as used in the social and clinical sciences occur in settings where many variables are measured as the post-test; contextual knowledge is already rich...and intelligent presumptions can be made about what this group would have been like without x. These factors can serve the same roles that pretest measures and control groups do more formally in the more elaborate experimental designs," (1979, p. 96).

Lincoln and Guba (1985) cite stipulations from other philosophers of science which the naturalistic paradigm meets. Hesse (1980) describes science in all its forms as "a learning machine." She further writes that all models "presuppose that the subject matter of learning is the empirical world...the learning process returns to the empirical world, which provides checks and reinforcements..." (quoted in Lincoln and Guba, p. 48).

Cronbach and Suppes, (1969, p. 16) according to Lincoln and Guba underscore as the most important characteristic of disciplined inquiry the requirement that it be conducted and reported in such a way that it can be critically and publically examined.

The debate about the legitimacy of qualitative research will probably continue for some time. Indeed, Kuhn's ideas suggest that this debate is itself a sign of a paradigm shift or revolution. Change in science is not smooth, gradual, logical, or rational, he argues. Nevertheless, if at no other level than the purely practical, the naturalistic paradigm is in operation and is contributing to educational research presently.

The final issue to be addressed here is that of whether or not the two paradigms can be integrated as C.P. Snow suggested. Ray Rist, a well-known writer on and practitioneer of qualitative research methodology in educational aplications, believes that the two paradigms should maintain a separate, but peaceful co-existence. In "On the relations among the research paradigms: From disdain to detente," he writes, "We only hinder and cripple ourselves by a continued fixation upon 'what is good' about one

approach and 'bad' about another, (p. 1). Also, he writes, "It is my view that with respect to the broad categories of quantitative and qualitative research, a situation of detente is rapidly evolving. This is due to at least two reasons. First, there is a general recognition that no one methodology can answer all questions and provide insights on all issues....Second, the internal order and logic of each approach is sufficiently articulated that it is difficult, if not impossible to foresee the time when they will merge under some broader, more eclectic research orientation," (p. 2).

Rist's commentary is more political than theoretical and more the product of ideological advocacy of qualitative research than of analysis. However, his point that no one paradigm can do it all seems eminently reasonable and seems to provide perhaps the single best argument for pursuing qualitative research. Perhaps Rist can imagine a "meta-science" in which the two paradigms are somehow merged, but the natures of paradigms suggest that this will not be the case. Also, the implications become apparent that consumers of educational research can integrate the findings of both types of research in problem solving or in practice.

As mentioned earlier in this paper, Hatch (1985) has argued that the types of research cannot be integrated because they are generated from different philosophical roots or different paradigms. Likewise, Lincoln and Guba argue that the paradigms are not reconcilable, (1985. p. 33). They note, however, that there is no reason why members of both traditions cannot exploit both qualitative and quantitative techniques, (p. 77).

D.T. Campbell, however, believes that an integration can occur. He writes, "In our iterative oscillation of theoretical emphases, in our continual dialectic that never achieves a stable synthesis, we are now ready for a post-post-positivist theory of science which will integrate the epistemological relativism recently acheived with a new and more complex understanding of the role of experimental evidence and predictive confirmation in science," (cited in Lincoln and Guba, 1985, p. 32).

If there is to be an integration, historians of science will let us know after the fact. Meanwhile, methodologists can debate the issue in a Kuhnian context ad infinitum. Apparently, we are in a period of competing paradigms in the social sciences. It would seem that the best strategy for educational researcher is to become fluent in both traditions, at least as consumers, if not as practitioneers.

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